

REMARKS

Please reconsider the present application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

At the outset, Applicant respectfully requests that a fully initialed PTO Form-1449 from the IDS filed on December 12, 2002, be returned. Applicant notes that documents A6 and A7 from this IDS were not initialed. If these documents have not been considered, appropriate consideration thereof is respectfully requested. Further, Applicant respectfully requests that the Examiner accept the drawings submitted on July 23, 2001. Applicant submits that these drawings are formal.

Disposition of Claims

Claims 1-8, 21, and 22 were pending in the present application. Claims 21 and 22 have been cancelled without prejudice or disclaimer. Accordingly, claims 1-8 are now pending in the present application. Claim 1 is independent. The remaining claims depend, directly or indirectly, from claim 1.

Claim Amendments

Independent claim 1 has been amended by way of this reply. No new matter has been added by way of these amendments, as support for these amendments may be found, for example, in paragraph [0021] of the present application. Applicant believes the included amendments do not require a new search, or at least simplify issues for appeal, and accordingly, applicant respectfully requests entry and favorable consideration thereof.

Objection(s)

The amendment filed on September 9, 2004, is objected to for introducing new matter into the disclosure. By way of this reply, the phrase “smoothness corresponding to glass material that does not converge on a mold face” has been removed from claim 1. Accordingly, withdrawal of the objection is respectfully requested.

Rejection(s) under 35 U.S.C § 112

Independent claim 1 is rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Claim 1 has been amended in this reply in view of this rejection. Specifically, the limitation “smoothness corresponding to glass material that does not converge on a mold face” has been removed from claim 1. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection(s) under 35 U.S.C § 102

Claims 1-5, 8, and 21 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,537,648 issued to Takahashi et al. (hereinafter “Takahashi”). Claim 21 has been cancelled by way of this reply. Thus, the rejection is now moot with respect to claim 21. Claim 1 has been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

The present invention is directed to a molded glass substrate for a magnetic disc. As discussed with reference to Figure 1 of the present application, in one embodiment of the present invention, a molded glass substrate (11) is formed with principal surfaces (12), a molding-free face (13), and an inner surface (14). The principal surfaces (12) are formed by press-molding

and the inner surface (14) is formed by machining. However, the outer surface is a molding-free face (13). In other words, instead of being controlled by a die or grinding and chamfering, the outer surface of the molded glass substrate (11) is formed with a mirror-finished surface during the molding process (*see* Specification, paragraphs [0042]-[0044]).

An exemplary method for producing the molded glass substrate is discussed with reference to Figures 2, 3, and 4 of the present invention. In this exemplary embodiment, a molding block (21) is formed from upper and lower dies (22, 23) and a barrel die (24). The glass material (25) is formed from aluminum silicate droplets having a weight of 580 mg. Upper and lower heating plates (33) are heated and pressure is applied via an upper heating plate to form the molded glass substrate (41) as shown in Figure 4 of the present application (*see* Specification, paragraph [0052]). Accordingly, amended independent claim 1 requires an outer surface joining the upper and lower principal surfaces, wherein the outer surface is a molding-free face.

As the outer surface of the glass substrate has a smooth, mirror-finished surface, surface polishing is not necessary. Further, as the edge of the outer surface has a rounded shape substantially equal to that obtained by chamfering, the otherwise necessary step of chamfering is also eliminated. As a result of the elimination of these steps, degradation of the glass substrate due to moisture or other contaminants may be reduced.

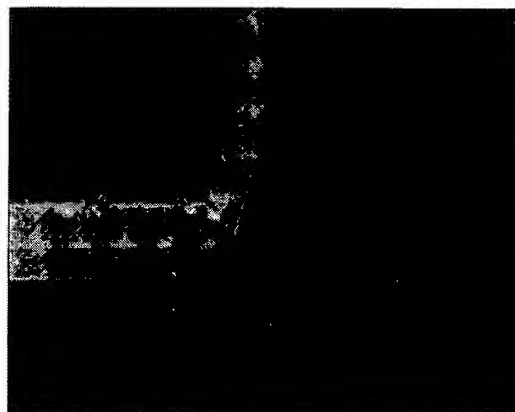
Takahashi, in contrast to the claimed invention, does not disclose an outer surface that is a molding-free face. As discussed by Takahashi, the outer peripheral end surface of the glass substrate is ground and chamfered to reduce its diameter and make the surface smoother (*see* Takahashi, col. 14, line 63 – col. 15, line 2).

A judgment as to whether a surface of a molded glass substrate is a molding-free face can be determined through the use of a scanning electron microscope or a similar device (*see* Specification, paragraph [0021]). As seen in the comparative examples below, a molded glass

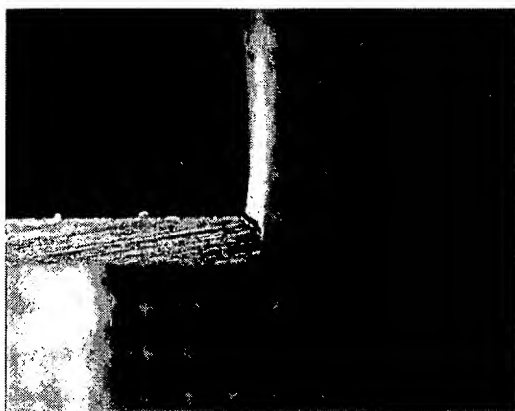
substrate according to the claimed invention has a rounded outer surface and a mirror-finished surface (*see* (b), (d)). In contrast to the claimed invention, a molded glass substrate of the prior art has a roughened surface (*see* (a), (c)). Further, as shown in comparative examples (e) and (f), the chamfered edge of molded glass substrates of the prior art (e) may result in cracking or other degradation of the glass that will not be present in a molded glass substrate of the claimed invention (f). Thus, non-obvious differences exist between a molded glass substrate of the claimed invention and a molded glass substrate of the prior art.



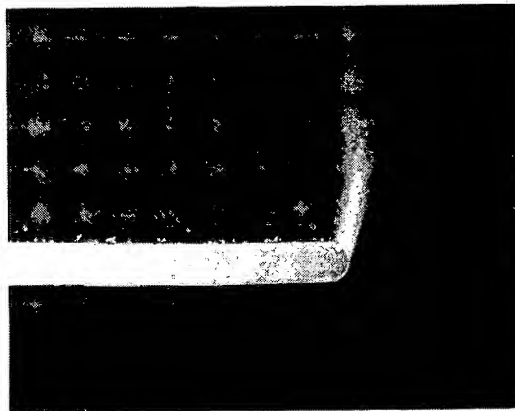
(a)



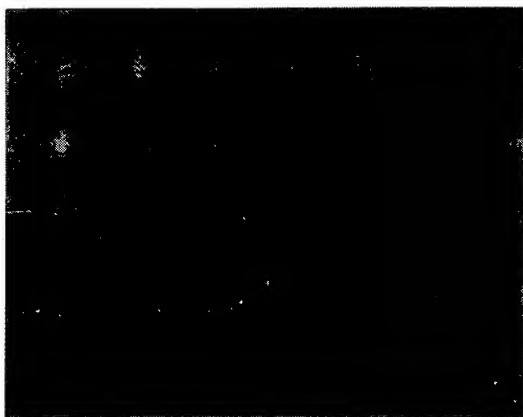
(b)



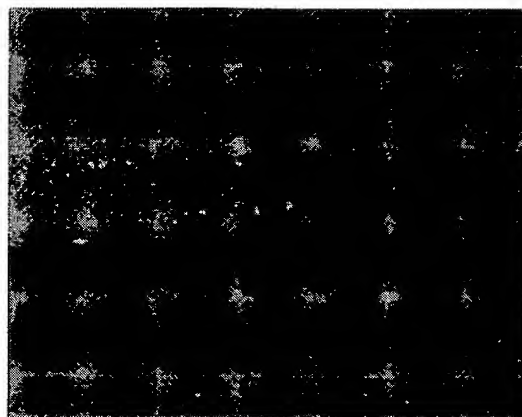
(c)



(d)



(e)



(f)

In view of the above, Takahashi fails to show or suggest the present invention as recited in amended independent claim 1. Thus, amended independent claim 1 is patentable over Takahashi. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection(s) under 35 U.S.C § 103

Dependent claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as being obvious over Takahashi in view of U.S. Patent No. 3,660,061 issued to Donley *et al.* (hereinafter "Donley"). For the reasons set forth below, this rejection is respectfully traversed.

As discussed above, Takahashi fails to teach or disclose all the limitations of amended independent claim 1. Donley fails to provide that which Takahashi lacks. Donley is directed to a method of exposing a glass sheet to a metal oxide film to provide desired properties such as reducing the transmission of certain wavelengths of light through the coated sheet (*see* Donley, Abstract). Donley is directed to ribbons and sheets of glass having the aforementioned coating. Donley states that a cut sheet cannot be cut to smaller sizes without danger of fracture after being heat-strengthened or tempered. Donley is completely silent with respect to amended

independent claim 1, which requires an outer surface joining the upper and lower principal surfaces of a molded glass substrate, wherein the outer surface is a molding-free face.

Further, the invention disclosed in Donley arose from the need of architects to design glass panels of different colors to blend with colors of walls they design (*see, e.g.*, Donley, col. 1, lines 58-68). Donley is not directed to molded glass substrates, and thus, would not be looked to by one skilled in the art. Accordingly, the references are also not properly combinable.

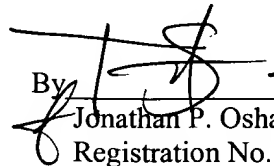
In view of the above, Takahashi and Donley, (1) whether taken separately or in combination, fail to show or suggest the present invention as recited in amended independent claim 1, and (2) are not properly combinable. Thus, amended independent claim 1 is patentable over Takahashi and Donley. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places the present application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 04558/053001).

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Respectfully submitted,

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